CLAIMS

1. An optical device for forming an image of fingerprints, comprising:

- an optical plate (1) with:
  - a first main face (2) constituting a face for affixing a finger (3) of which an image of the fingerprints is to be obtained,
  - a first lateral face (4) shaped as a convergent mirror, and
  - a second lateral face (5), opposite the first lateral face (4) and forming the exit face of the optical plate,
- at least one light source (7) for illuminating said first main face (2) through the optical plate (1),
- a focusing objective (9), situated opposite said exit face (5) of the optical plate and having its object focal point situated substantially in the focal plane of the convergent mirror, and
- a diaphragm (10) provided with an aperture (11), said diaphragm being interposed between said exit face (5) and said focusing objective (9) and situated substantially in the vicinity to the focusing objective,

characterized in that said first main face (2) of the optical plate (1) forms, with the exit face (5) of this optical plate, an angle of greater than 90°, whereby the angle of incidence of the light rays on said first main face, inside the optical plate, is increased and the stray radiation arriving at the exit face is decreased, at the same time as the thickness of the optical plate can be reduced.

2. The optical device as claimed in claim 1, characterized in that the plane (P) defined by said first main face (2) intersects the diaphragm (10) under the aperture (11) of the latter,

whereby a major part of the stray light transmitted from the exit face is intercepted by the diaphragm under the aperture of the latter.

3. The optical device as claimed in claim 2, characterized in that the inclination of said first main face (2) is just sufficient for said plane (P) to intersect the diaphragm (10) in the immediate vicinity of its aperture (11).

4. The optical device as claimed in claim 3, characterized in that the angle of inclination of said first main face (2) with respect to a plane perpendicular to the exit face is between 2° and 25°.

5. The optical device as claimed in claim 4, characterized in that said angle of inclination of the first main face (2) is around 10°.

6. The optical device as claimed in any one of claims 1 to 5, the optical plate (1) possessing third and fourth lateral faces (8) extending respectively between said first and second lateral faces (4, 5) and mutually opposed, characterized in that said third and fourth lateral faces (8) are inclined towards one another from the first lateral face (2) and in that at least one light source (7) is disposed opposite at least one of the third and fourth lateral faces.

7. The optical device as claimed in any one of claims 1 to 6, characterized in that the optical plate (1) and the focusing objective (9) are constituted in the form of one single piece (13) having a slot (14) defined by the exit face (5) of the optical plate (1) and the entrance face of the focusing objective (9), said slot (14) being shaped so as to receive said diaphragm (10).

8. The optical device as claimed in any one of claims 1 to 7, characterized in that downstream of the focusing objective (9) a mirror (15) is located being arranged so as to reflect the luminous radiation substantially perpendicularly to the optical plate.